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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,057	09/05/2003	Ronald E. Steele	RD8350USNA	9391

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INVISTA NORTH AMERICA S.A.R.L.
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EXAMINER	
BUTLER, PATRICK	
ART UNIT	PAPER NUMBER
1732	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/656,057	STEELE, RONALD E.	
	Examiner	Art Unit	
	Patrick Butler	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) *6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 November 2006 has been entered.

Response to Amendment

The Applicant's Amendments and Accompanying Remarks, filed 13 November 2006, have been entered and have been carefully considered. No Claims are new, Claim 1 is amended, no Claims are canceled, and Claims 1-6 are pending, with Claim 6 withdrawn.

Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwinn (US Patent No. 6,234,390).

Schwinn teaches a method of making a melt spun polyamide filament (abstract). Schwinn teaches supplying polyamide polymer to a solid phase polycondensation apparatus (SPP) (see col. 6, lines 61-64). The polymer is in the range of about 40 to about 60 RV, and viewing Schwinn's RV value of about 40 as one significant digit, it necessarily reads on 35-45, which includes the claimed range of 36-38 RV (see col. 7, line 30). Moreover, by stating that suitable polymer RV value is provided if the RV is about 40, Schwinn directly teaches the use of a RV within Applicant's claimed range of 36-38 (see MPEP 2144.05 I). Moreover, if the claimed ranges and prior art ranges were to not be considered to overlap via a limited interpretation of "about 40" to exclude 38, the claimed range of 36-38 and Schwinn teaching about 40 are close enough that one skilled in the art would have expected them to have the same properties (see MPEP 2144.05 I). A nitrogen purge gas is supplied at 23-51 m^3/min. and polymer is supplied from 1460 to 1870 lb./hr. (see col. 7, lines 56-59; col. 8, lines 36-40; and Table 1). The gas has a dew point of –20C to 20 C (see col. 8, line 66 through col. 9, line 1). Gas sent through the SPP vessel 16 to remove water is directed back into the SPP vessel to constitute 50% of purge gas (humidifying a purge gas with water vapor) (see col. 8, lines 56-60; col. 9, lines 15-21). The ratio of the flow rates ($^{kg\ purge\ gas/hour}/_{kg\ polymer/hour}$) is 1.9 to 5.5 (see calculations below), which reads on the claimed range of about 2 to about 3.

N_2 flow rate	Conversion	dimensional conversion	N_2 flow rate
(m^3/min)	1.185 kg/m^3 of N_2 at STP	60 min./hr.	kg./hr.
23	1.185	60	1635
51	1.185	60	3626

polymer mass flow	
lb./hr.	kg./hr.
1460	663
1660	754
1870	849

purge gas flow rate kg./hr.	polymer flow rate kg./hr.	mass flow ratio of purge gas to polymer
1635	663	2.5
3626	663	**5.5**
1635	754	2.2
3626	754	4.8
1635	849	**1.9**
3626	849	4.3

Schwinn teaches conveying the polymer to a melt extruder and extruding the melted polyamide polymer through a spinneret to form at least one continuous filament (see col. 16, lines 22-30).

Schwinn does not appear to explicitly teach that the solid phase polycondensation system pressure is within the claimed range (e.g., 110 to 120 kPascal). However, in this regard, Schwinn further teaches that a constant amount of gas per unit time is to be maintained with positive pressure in the SPP vessel (see col. 8, lines 27-33). As such, Schwinn obvious recognizes that the solid phase polycondensation system pressure is a result-effective variable. Since the solid phase polycondensation system pressure would be a result-effective variable, one of ordinary skill in the art would have obviously determined the optimum the solid phase polycondensation system pressure applied in the process of Schwinn through routine experimentation based upon maintaining the desired amount of gas flow and positive pressure in the SPP vessel.

Moreover, since the vessel is pressurized to only 2 psig (see col. 8, lines 27-33), the only additional pressure to atmospheric pressure would be the pressure to drive the gas through the flake (see col. 8, lines 27-33), which would be about 110-120 kPascal.

The examiner recognizes that all of the claimed effects and physical properties are not positively stated by the reference(s). Note however that the reference teaches all of the claimed ingredients, process steps and process conditions and thus, the claimed effects (filaments with a yarn RV of about 51-54) and physical properties would necessarily be achieved by carrying out the disclosed process. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the examiner's position that the application contains inadequate disclosure in that there is no teaching as to how to obtain the claimed properties and effects by carrying out only these steps. Thus, Schwinn teaches the claimed process result of the filaments with a yarn RV of about 51-54 principally because it teaches the claimed ingredients and claimed process steps.

With respect to Claim 2, the filaments are quenched, which is a type of cooling, this quenching and cooling (see col. 13, lines 30-34).

With respect to Claim 3, the filament is coated with a spin finish, which reads on the broadly claimed "post-treating" (see col. 13, lines 30-34), and is wound around several rollers 178, 178, and 180 (see Fig. 4), which reads on the broadly claimed "winding".

With respect to Claim 5, as previously described in Claim 1, Nitrogen is purge gas and a ratio of 1.9-5.5 is obtained, reading on the claimed range of 2-3.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schwinn (US Patent No. 6,234,390) as applied to claim 3 above, and further in view of Eberius (US Patent No. 4,034,034).

With respect to Claim 4, Schwinn teaches a process for making a synthetic melt spun polyamide filament as previously described.

Schwinn does not explicitly teach wiping the spinneret plate on the capillary exit side, in cycles, wherein each wiling cycle is separated by about 8 to about 12 hours.

Eberius teaches making a polyamide filament and wiping the spinneret in a cycle of 8 hours, which reads on the claimed range.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to wipe the spinneret as taught by Eberius in the process as taught by Schwinn because drippings, deposits, and encrustations easily form on the spinneret, and to prevent disruptions to production and formation of expected package size (see Eberius, col. 1, lines 32-64 and col. 2, lines 62-69).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schwinn (US Patent No. 6,234,390) as applied to claim 3 above, and further in view of Fourné (*Synthetic Fibers*, p. 359).

With respect to Claim 4, Schwinn teaches a process for making a synthetic melt spun polyamide filament as previously described.

Schwinn does not explicitly teach wiping the spinneret plate on the capillary exit side, in cycles, wherein each wiling cycle is separated by about 8 to about 12 hours.

Fourné teaching wiping the first 5-15 cm below the spinneret, which would include the spinneret, at regular intervals (cycle) to avoid monomer growth (first paragraph of section 4.7.5.1).

Schwinn in view of Fourné does not appear to explicitly teach that the wipe cycle frequency is within the claimed range (e.g., every 8-12 hours). However, in this regard, Fourné further teaches wiping at regular intervals to avoid monomer growth on the spinneret area (first paragraph of section 4.7.5.1). As such, Fourné obvious recognizes that the wipe cycle frequency is a result-effective variable. Since the wipe cycle frequency would be a result-effective variable, one of ordinary skill in the art would have obviously determined the optimum the wipe cycle frequency applied in the process of Schwinn in view of Fourné through routine experimentation based upon minimizing disruptive monomer build-up.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to wipe the spinneret as taught by Fourné in the process as taught by Schwinn in order to minimize disruptive monomer build-up.

Response to Arguments

Applicant's arguments filed 13 November 2006 have been fully considered but they are not persuasive.

Applicant argues with respect to the 35 USC 103 rejections. Applicant's arguments appear to be on the grounds that:

1) Schwinn's supply polymer has RV of about 40 to about 60, which is different from the 36-38 RV used in applicant's Claim.

2) Schwinn does not expressly teach that the RV of the formed filaments is 51-54.

3) Schwinn fails to teach humidifying the purge gas prior to introduction to an SPP apparatus. To the contrary, Schwinn excludes a purge gas humidifying step by teaching a very low dew point temperature circulating gas in the SPP vessel—no more than about 20 °C—to rigorously avoid water vapor.

4) Humidity does not mean that the gas is humidified, as was previously alleged by the Examiner.

5) Schwinn purposefully minimizes the humidity in the purge gas, thus humidifying would be contrary to Schwinn's teachings.

The Applicant's arguments are addressed as follows:

1) Viewing Schwinn's RV value of about 40 as one significant digit, it necessarily reads on 35-45, which includes the claimed range.

2) As described above and at Page 8, response to argument 3, in the Office Action of 13 July 2006:

> The examiner recognizes that all of the claimed effects and physical properties are not positively stated by the reference(s). Note however that the references teach all of the claimed ingredients, process steps and process conditions and thus, the claimed effects and physical properties would necessarily be achieved by carrying out the disclosed process. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the examiner's position that

the application contains inadequate disclosure in that there is no teaching as to how to obtain the claimed properties and effects by carrying out only these steps.

3 and 5) Schwinn is relied upon for all that it teaches, not merely teachings of drying the purge gas. Since the gas flow through Schwinn is a cycle the same material through the SPP, Schwinn's SPP is the first part of the cycle of preparing purge gas to enter the SPP chamber. Since the SPP chamber drives water into the gas (humidifies it), and since this gas is directed directly back into the SPP chamber at 50% for the next cycle, the gas entering the SPP chamber has been humidified, as described above:

> Gas sent through the SPP vessel 16 to remove water is directed back into the SPP vessel to constitute 50% of purge gas (humidifying a purge gas with water vapor) (see col. 8, lines 56-60; col. 9, lines 15-21).

Thus, the gas picking up water in the SPP vessel before it is sent into the SPP vessel for the next cycle is inherently a step of humidifying given that it occurs before reaching the vessel entrance for the next cycle and given that water is expressly taught to be added to the gas via extraction from the flakes in the SPP vessel before the gas re-enters the vessel for the next cycle.

4) Discussion of the differences in the terms "humidified" and "humidity" is moot in view of the term "humidified" deleted by Applicant's Amendment submitted 13 November 2006.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-

8517. The examiner can normally be reached on Mo.-Th. 7:30 a.m. - 5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PB

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MARK EASHOO, PH.D
PRIMARY EXAMINER

05 Feb 07